10 CSR 10-5.530 Control of Volatile Organic Compound Emissions From Wood Furniture Manufacturing Operations

(1) Applicability.

(A) This rule shall apply throughout the city of St. Louis and St. Charles, St. Louis, Jefferson and Franklin Counties.

(B) This rule is applicable to all wood furniture manufacturing installations that have the potential to emit equal to or greater than twenty-five (25) tons per year of volatile organic compounds (VOC).

(C) Adhesives shall not be considered coatings or finishing materials for the purposes of this rule.

(D) In the event that other rules in Title 10 Division 10 of the *Code of State Regulations* are also applicable to wood furniture manufacturing installations, the more stringent rule requirement shall apply.

(2) Definitions.

(A) Adhesive.Any chemical substance that is applied for the purpose of bonding two (2) surfaces together other than by mechanical means.

(B) Affected source.A wood furniture manufacturing facility that meets the criteria listed in subsections (1)(A) and (1)(B) of this rule.

(C) Alternative method.Any method of sampling and analyzing for an air pollutant that is not a reference or equivalent method but that has been demonstrated to the director's satisfaction to, in specific cases, produce results adequate for a determination of compliance.

(D) As applied.The VOC and solids content of the finishing material that is actually used for coating the substrate. It includes the contribution of materials used for in-house dilution of the finishing material.

(E) Basecoat.A coat of colored material, usually opaque, that is applied before graining inks, glazing coats, or other opaque finishing materials and is usually topcoated for protection.

(F) Capture device.A hood, enclosed room, floor sweep, or other means of collecting solvent emissions or other pollutants into a duct so that the pollutant can be directed to a pollution control device such as an incinerator or carbon adsorber.

(G) Capture efficiency.The fraction of all organic vapors generated by a process that are directed to a control device.

(H) Certified product data sheet.Documentation furnished by a coating supplier or an outside laboratory that provides the VOC content by percent weight, the solids content by percent weight, and density of a finishing material, strippable booth coating, or solvent, measured using the EPA Method 24, or an equivalent or alternative method (or formulation data if approved by the director). The purpose of the certified product data sheet is to assist the affected source in demonstrating compliance with the emission limitations presented in subsection (3)(A) of this rule. Therefore, the VOC content should represent the maximum VOC emission potential of the finishing material, strippable booth coating, or solvent.

(I) Cleaning operations.Operations in which organic solvent is used to remove coating materials from equipment used in wood furniture manufacturing operations.

(J) Coating.A protective, decorative, or functional material applied in a thin layer to a surface. Such materials include, but are not limited to, paints, topcoats, varnishes, sealers, stains, washcoats, basecoats, inks, and temporary protective coatings.

(K) Coating solids (or .solids.).The part of the coating that remains after the coating is dried or cured; solids content is determined using data from EPA Method 24, or an alternative or equivalent method.

(L) Compliant coating.A finishing material or strippable booth coating that meets the emission limits specified in paragraph (3)(A)1. of this rule.

(M) Continuous coater.A finishing system that continuously applies finishing materials onto furniture parts moving along a conveyor system. Finishing materials that are not transferred to the part are recycled to the finishing material reservoir. Several types of application methods can be used with a continuous coater including spraying, curtain coating, roll coating, dip coating, and flow coating.

(N) Control device.Any equipment that reduces the quantity of a pollutant that is emitted to the air. The device may destroy or secure the pollutant for subsequent recovery. Includes, but is not limited to, incinerators, carbon adsorbers, and condensers.

(O) Control device efficiency.The ratio of the pollution released by a control device and the pollution introduced to the control device, expressed as a fraction.

(P) Control system.The combination of capture and control devices used to reduce emissions to the atmosphere.

(Q) Conventional air spray.A spray coating method in which the coating is atomized by mixing it with compressed air at an air pressure greater than ten (10) pounds per square inch (gauge) at the point of atomization. Airless and air assisted airless spray technologies are not conventional air spray because the coating is not atomized by mixing it with compressed air. Electrostatic spray technology is also not considered conventional air spray because an electrostatic charge is employed to attract the coating to the workpiece.

(R) Day.A period of twenty-four (24) consecutive hours beginning at midnight local time, or beginning at a time consistent with a facility's operating schedule.

(S) Disposed off-site.Sending used organic solvents or coatings outside of the facility boundaries for disposal.

(T) Emission.The release or discharge, whether directly or indirectly, of VOC into the ambient air.

(U) Equipment leak.Emissions of volatile organic compounds from pumps, valves, flanges, or other equipment used to transfer or apply finishing materials or organic solvents.

(V) Equivalent method.Any method of sampling and analyzing for an air pollutant that has been demonstrated to the director's satisfaction to have a consistent and quantitatively known relationship to the reference method under specific conditions.

(W) Finishing application station.The part of a finishing operation where the finishing material is applied, e.g., a spray booth.

(X) Finishing material.A coating used in the wood furniture industry. For the wood furniture manufacturing industry, such materials include, but are not limited to, basecoats, stains, washcoats, sealers, and topcoats.

(Y) Finishing operation.Those activities in which a finishing material is applied to a substrate and is subsequently air-dried, cured in an oven, or cured by radiation.

(Z) Incinerator.An enclosed combustion device that thermally oxidizes volatile organic compounds to carbon monoxide (CO) and carbon dioxide (CO_2). This term does not include devices that burn municipal or hazardous waste material.

(AA) Nonpermanent final finish.A material such as a wax, polish, nonoxidizing oil, or similar substance that must be periodically reapplied to a surface over its lifetime to maintain or restore the reapplied material's intended effect.

(BB) Normally closed container.A storage container that is closed unless an operator is actively engaged in activities such as emptying or filling the container.

(CC) Operating parameter value.A minimum or maximum value established for a control device or process parameter that, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emission limit.

(DD) Organic solvent.A liquid containing volatile organic compounds that is used for dissolving or dispersing constituents in a coating, adjusting the viscosity of a coating, cleaning, or washoff. When used in a coating, the organic solvent evaporates during drying and does not become a part of the dried film.

(EE) Overall control efficiency.The efficiency of a control system, calculated as the product of the capture and control device efficiencies, expressed as a percentage.

(FF) Recycled on-site.The reuse of an organic solvent in a process other than cleaning or washoff.

(GG) Reference method.Any method of sampling and analyzing for an air pollutant that is published in Appendix A of 40 CFR 60.

(HH) Sealer.A finishing material used to seal the pores of a wood substrate before additional coats of finishing material are applied. Washcoats, which are used in some finishing systems to optimize aesthetics, are not sealers.

(II) Stain.Any color coat having a solids content by weight of no more than 8.0 percent that is applied in single or multiple coats directly to the substrate. Includes, but is not limited to, nongrain raising stains, equalizer stains, sap stains, body stains, no-wipe stains, penetrating stains, and toners.

(JJ) Storage container.Vessel or tank, including mix equipment, used to hold finishing, cleaning or washoff materials.

(KK) Strippable booth coating.A coating that: 1) is applied to a booth wall to provide a protective film to receive overspray during finishing operations; 2) that is

subsequently peeled off and disposed; and 3) by achieving 1) and 2), reduces or eliminates the need to use organic solvents to clean booth walls.

(LL) Substrate.The surface onto which coatings are applied (or into which coatings are impregnated).

(MM) Topcoat.The last film-building finishing material applied in a finishing system. Nonpermanent final finishes are not topcoats.

(NN) Touch-up and repair.The application of finishing materials to cover minor finishing imperfections.

(OO) Washcoat.A transparent special purpose coating having a solids content by weight of 12.0 percent or less. Washcoats are applied over initial stains to protect and control color and to stiffen the wood fibers in order to aid sanding.

(PP) Washoff operations.Those operations in which organic solvent is used to remove coating from a substrate.

(QQ) Wood furniture.Any product made of wood, a wood product such as rattan or wicker, or an engineered wood product such as particleboard that is manufactured under any of the following standard industrial classification codes: 2434, 2511, 2512, 2517, 2519, 2521, 2531, 2541, 2599 or 5712.

(RR) Wood furniture component.Any part that is used in the manufacture of wood furniture. Examples include, but are not limited to, drawer sides, cabinet doors, seat cushions, and laminated tops.

(SS) Wood furniture manufacturing operations.The finishing, cleaning, and washoff operations associated with the production of wood furniture or wood furniture components.

(TT) Working day.A day, or any part of a day, in which a facility is engaged in manufacturing.

(UU) Definitions of certain terms specified in this rule, other than those specified in this rule section, may be found in 10 CSR 10-6.020.

(3) General Provisions.

(A) Restriction of Emissions.

1. The owner or operator of an affected source shall limit VOC emissions from finishing operations by complying with one of the following requirements:

A. Where only topcoat is applied without sealers, the topcoat shall have a VOC content no greater than Table 1; or

Table 1.

	kg VOC/kg solids (as applied)	lb VOC/lb solids (as applied)
Topcoat	0.8	0.8

B. Where topcoat and sealers are applied and.

(I) Where sealer is not acid-cured alkyd amino vinyl or topcoat is not acid-cured alkyd amino conversion varnish, the VOC contents shall be no more than shown in Table 2;

Table 2.

	kg VOC/kg solids (as applied)	lb VOC/lb solids (as applied)
Sealer	1.9	1.9
Topcoat	1.8	1.8

(II) Where sealer is acid-cured alkyd amino vinyl and topcoat is acid-cured alkyd amino conversion varnish, the VOC contents shall be no more than shown in Table 3;

Table 3.

	kg VOC/kg solids (as applied)	lb VOC/lb solids (as applied)
Sealer	2.3	2.3
Topcoat	2.0	2.0

(III) Where sealer is not acid-cured alkyd amino vinyl and topcoat is acid-cured alkyd amino conversion varnish, the

VOC contents shall be no more than shown in Table 4; or

Table 4.

	kg VOC/kg solids (as applied)	lb VOC/lb solids (as applied)
Sealer	1.9	1.9
Topcoat	2.0	2.0

(IV) Where sealer is acid-cured alkyd amino vinyl and topcoat is not acid-cured alkyd amino conversion varnish, the VOC contents shall be no more than shown in Table 5.

Table 5.

	kg VOC/kg solids (as applied)	lb VOC/lb solids (as applied)
Sealer	2.3	2.3
Topcoat	1.8	1.8

2. As an alternate to the finish operation requirements of paragraph (3)(A)1. of this rule, the owner or operator of an affected source may use an averaging approach to verify compliance by using this paragraph. Compliance is demonstrated when actual emissions from the affected source are less than or equal to allowable emissions using one of the following inequalities:

$$0.9(0.8(TC_1 + TC_2 +.)) \quad [(ER_{TC1})\,(TC_1) + (ER_{TC2})(TC_2) +.] \qquad (1)$$

$$0.9\{[1.8(TC_1 + TC_2 +.)] + [1.9(SE_1 + SE_2 +.)] + [9.0\,(WC_1 + WC_2 +.)] + [1.2\,(BC_1 + BC_2 +.)] + [0.791\,(ST_1 + ST_2 +.)]\} \quad [ER_{TC1}\,(TC_1) + ER_{TC2}\,(TC_2) +.] + [ER_{SE1}\,(SE_1) + ER_{SE2}\,(SE_2) +.] + [ER_{WC1}\,(WC_1) + ER_{WC2}(WC_2) +.] + [ER_{BC1}\,(BC_1) + ER_{BC2}\,(BC_2) +.] + [ER_{ST1}\,(ST_1) + ER_{ST2}\,(ST_2) + .] \qquad (2)$$

where:

TC_i = kilograms of solids of topcoat "i" used;
SE_i = kilograms of solids of sealer "i" used;
WC_i = kilograms of solids of washcoat "i" used;
BC_i = kilograms of solids of basecoat "i" used;
ST_i = liters of stain "i" used;

ER_{TCi} = VOC content of topcoat "i" in kg VOC/kg solids, as applied;

ER_{SEi} = VOC content of sealer "i" in kg VOC/kg solids, as applied;

ER_{WCi} = VOC content of washcoat "i" in kg VOC/kg solids, as applied;

ER_{BCi} = VOC content of basecoat "i" in kg VOC/kg solids, as applied;

and

ER_{STi} = VOC content of stain "i" in kg VOC/liter (kg/l), as applied.

Note 1: Various numeric values used in inequalities (0.8, 1.8, 1.9, etc.) are maximum allowable VOC contents for various coatings.

Note 2: The 0.9 multiplying factor on the allowable emissions side of the inequality is used to assure that sources using the averaging approach demonstrate that their emissions are no greater than ninety percent (90%) of what they would be if they were using compliant coatings.

For Inequalities (1) and (2), the facility must use the actual VOC content of the finishing materials used prior to the effective date of this rule if the VOC content is less than the allowable VOC content. For example, if the affected source was using topcoats with a VOC content of 1.7 kilograms of VOC per kilogram of solids (1.7 pounds of VOC per pound of solids) before being subject to this rule, the affected source must use that value in Inequality (2) rather than 1.8.

3. As an alternate to the finish operation requirements of subparagraph (3)(A)1.A. or part (3)(A)1.B.(II) of this rule, the owner or operator of an affected source may use a control system that will achieve an equivalent reduction in emissions as demonstrated using the compliance requirements of subparagraph (3)(C)1.B. of this rule.

4. As an alternate to the finish operation requirements of paragraphs (3)(A)1. and (3)(A)2. of this rule, the owner or operator of an affected source may use a combination of the methods presented in paragraphs (3)(A)1., (3)(A)2. and (3)(A)3. of this rule as demonstrated using the compliance requirements of subparagraph (3)(C)1.C. of this rule.

5. The owner or operator of an affected source shall limit VOC emissions from cleaning operations when using a strippable booth coating. The VOC contents shall be no more than shown in Table 6.

Table 6.

	kg VOC/kg solids (as applied)	lb VOC/lb solids (as applied)
Strippable booth coating	0.8	0.8

(B) Work Practice Standards. The owner or operator of an affected source shall develop and maintain work practice standards that include, at a minimum:

1. A written work practice implementation plan that defines work practices for each wood furniture manufacturing operation and addresses each of the topics specified in paragraphs (3)(B)2. through (3)(B)10. of this subsection. The plan shall be developed no more than sixty (60) days after the compliance date of this rule. The owner or operator of the affected source shall comply with each provision of the work practice implementation plan. The written work practice implementation plan shall be available for inspection by the department, upon request. If the department determines that the work practice implementation plan does not adequately address each of the topics specified in paragraphs (3)(B)2. through (3)(B)10. of this subsection, the department may require the affected source to modify the plan.

2. Operator training for all new and existing personnel, including contract personnel, who are involved in finishing, cleaning, or washoff operations or implementation of the requirements of this rule. All new personnel, those hired after the effective date of the rule, shall be trained upon hiring. All existing personnel, those hired before the effective date of the rule, shall be trained within six (6) months of the effective date of the rule. All personnel shall be given refresher training annually. The affected source shall maintain a copy of the training program with the work practice implementation plan. The training program shall include, at a minimum, the following:

A. A list of all current personnel by name and job description that are required to be trained;

B. An outline of the subjects to be covered in the initial and refresher

training for each position, or group of personnel;

C. Lesson plans for courses to be given at the initial and the annual refresher training that include, at a minimum, appropriate application techniques, appropriate cleaning and washoff procedures, appropriate equipment setup and adjustment to minimize finishing material usage and overspray, and appropriate management of cleanup wastes; and

D. A description of the methods to be used at the completion of initial or refresher training to demonstrate and document successful completion and a record of the date each employee is trained.

3. A leak inspection and maintenance plan that shall be prepared and maintained with the work practice implementation plan and specify, at a minimum.

A. A minimum visual inspection frequency of once per month for all equipment used to transfer or apply finishing materials or organic solvents;

B. An inspection schedule;

C. Methods for documenting the date and results of each inspection and any repairs that were made;

D. The timeframe between identifying a leak and making the repair, which adheres to the following schedule:

(I) A first attempt at repair (e.g., tightening of packing glands) shall be made no later than five (5) working days after the leak is detected; and

(II) Final repairs shall be made within fifteen (15) working days, unless the leaking equipment is to be replaced by a new purchase, in which case repairs shall be completed within three (3) months;

4. A cleaning and washoff solvent accounting system that includes an organic solvent accounting form to record–

A. The quantity and type of organic solvent used each month for washoff and cleaning;

B. The number of pieces washed off with the reason for washoff; and

C. The net quantity of spent organic solvent generated from each activity. The net quantity of spent solvent is equivalent to the total amount of organic solvent that is generated from the activity minus any organic solvent that is recycled on-site for operations other than cleaning or washoff and any organic solvent that was sent disposed off-site;

5. Spray booth cleaning that shall not use compounds containing more than 8.0 percent by weight of VOC for cleaning spray booth components other than conveyors, continuous coaters and their enclosures, and/or metal filters, unless the spray booth is being refurbished. If the spray booth is being refurbished (that is, the spray booth coating or other material used to cover the booth is being replaced), the affected source shall use no more than 1.0 gallon of organic solvent to prepare the booth prior to applying the booth coating;

6. Storage requirements to ensure that owners or operators of affected sources use normally closed containers for storing finishing, cleaning and washoff materials;

7. Application equipment requirements to ensure owners or operators of affected sources do not use conventional air spray guns for applying finishing materials except for the following conditions:

A. When applying finishing materials that have a VOC content no greater than 1.0 kg VOC/kg solids (1.0 lb VOC/lb solids), as applied;

B. To touch-up and repair when.

(I) The finishing materials are applied after completion of the finishing operation; or

(II) The finishing materials are applied after the stain and before any other type of finishing material is applied, and the finishing materials are applied from a container that has a

volume of no more than 2.0 gallons;

C. When spray is automated (that is, the spray gun is aimed and triggered automatically, not manually);

D. When emissions from the finishing application station are directed to a control device;

E. When the conventional air gun is used to apply finishing materials and the cumulative total usage of that finishing material is no more than 5.0 percent of the total gallons of finishing material used during that semiannual reporting period; or

F. When the conventional air gun is used to apply stain on a part for which it is technically or economically infeasible to use any other spray application technology. For this condition, the owner or operator of the affected source shall demonstrate why it is technically or economically infeasible by submitting to the department a videotape, a technical report or other documentation to support the affected source's claim. The support documentation shall include the following criteria, either independently or in combination:

(I) The production speed is too high or the part shape is too complex for one operator to coat the part and the application station is not large enough to accommodate an additional operator; or

(II) The excessively large vertical spray area of the part makes it difficult to avoid sagging or runs in the stain;

8. Line cleaning that pumps or drains all organic solvent used for line cleaning into a normally closed container.

9. Gun cleaning that collects all organic solvent used to clean spray guns into a normally closed container; and

10. Washoff operations that control emissions from washoff operations by.

A. Using normally closed tanks for washoff; and

B. Minimizing dripping by tilting or rotating the part to drain as much organic solvent as possible.

(C) Compliance Procedures and Monitoring Requirements.

1. The owner or operator of an affected source subject to the emission standards in subsection (3)(A) of this rule shall demonstrate compliance with those requirements by using one of the following methods:

A. To demonstrate that each sealer, topcoat and strippable booth coating meets the applicable requirements of paragraphs (3)(A)1. and (3)(A)5. of this rule, the owner or operator shall maintain certified product data sheets for each of these finishing materials. If solvent or other VOC is added to the finishing material before application, the owner or operator shall maintain documentation showing the VOC content of the finishing material as applied, in kg VOC/kg solids (lb VOC/lb solids); or

B. To demonstrate compliance through the use of a control system per paragraph (3)(A)3. of this rule, the owner or operator shall.

(I) Determine the overall control efficiency needed to demonstrate compliance using Equation (3) as follows;

$$R = [(C - E)/C] \times 100 \qquad (3)$$

where:

R = the overall efficiency of the control system, expressed as a percentage;

C = the VOC content of a coating (C), in kilograms of VOC per kilogram of coating solids (kg VOC/kg solids), as applied. Also given in pounds of VOC per pound of coating solids (lb VOC/lb solids), as applied; and

E = the emission limit achieved by the affected emission point(s), in kg VOC/kg solids;

(II) Document that the value of C in Equation (3) is obtained from the VOC and solids content of the as-applied finishing material; and

(III) Calculate the overall efficiency of the control device, using the procedure in subsection (5)(D) of this rule, and demonstrate that the value of the overall efficiency of the control system, expressed as a percentage, is equal to or greater than the value of R calculated by Equation (3).

C. To demonstrate compliance through the use of a combination of the methods per paragraph (3)(A)4. of this rule, the owner or operator shall meet all individual compliance requirements for the applicable methods being combined.

2. Initial compliance.

A. The owner or operator of an affected source subject to a requirement of paragraph (3)(A)1. or (3)(A)5. of this rule that is complying through the method established in subparagraph (3)(C)1.A. of this rule, shall submit an initial compliance status report, as required by paragraph (4)(A)2. of this rule, stating that compliant sealers and/or topcoats and strippable booth coatings are being used by the affected source.

B. The owner or operator of an affected source subject to a requirement of paragraph (3)(A)1. of this rule that is complying through the method established in subparagraph (3)(C)1.A. of this rule and is applying sealers and/or topcoats using continuous coaters shall demonstrate initial compliance by.

(I) Submitting an initial compliance status report stating that compliant sealers and/or topcoats, as determined by the VOC content of the finishing material in the reservoir and the VOC content as calculated from records, are being used; or

(II) Submitting an initial compliance status report stating that compliant sealers and/or topcoats, as determined by the VOC content of the finishing material in the reservoir, are being used and the viscosity of the finishing material in the reservoir is being monitored. The affected source shall also

provide data that demonstrates the correlation between the viscosity of the finishing material and the VOC content of the finishing material in the reservoir.

C. The owner or operator of an affected source demonstrating compliance with this rule through the use of a control system (capture device/control device) per paragraph (3)(A)3. and subparagraph (3)(C)1.B. of this rule, shall demonstrate initial compliance by.

(I) Submitting a monitoring plan that identifies the operating parameter to be monitored for the capture device and discusses why the parameter is appropriate for demonstrating ongoing compliance;

(II) Conducting an initial performance test using the procedures and test methods listed in subsections (5)(C) and (5)(D) of this rule (test methods in paragraphs (5)(C)3., (5)(C)4. and (5)(C)5. of this rule shall be performed, as applicable, at least twice during each test period);

(III) Calculating the overall control efficiency using the procedure in subsection (5)(D) of this rule;

(IV) Determining those operating conditions critical to determining compliance and establishing operating parameters that will ensure compliance with the standard as follows:

(a) For compliance with a thermal incinerator, minimum combustion temperature shall be the operating parameter;

(b) For compliance with a catalytic incinerator equipped with a fixed catalyst bed, the minimum gas temperature both upstream and downstream of the catalyst bed shall be the operating parameter;

(c) For compliance with a catalytic incinerator equipped with a fluidized catalyst bed, the minimum gas

temperature upstream of the catalyst bed and the pressure drop across the catalyst bed shall be the operating parameters; and

(d) For compliance with a carbon adsorber, the operating parameters shall be either the total regeneration mass stream flow for each regeneration cycle and the carbon bed temperature after each regeneration, or the concentration level of organic compounds exiting the adsorber, unless the owner or operator requests and receives approval from the director to establish other operating parameters; and

(V) The owner or operator of an affected source demonstrating compliance with this rule per subparagraph (3)(C)2.C. of this rule shall calculate the site-specific operating parameter value as the arithmetic average of the maximum or minimum operating parameter values, as appropriate, that demonstrate compliance with the standards, during the three test runs required by paragraph (5)(C)1. of this rule.

D. The owner or operator of an affected source subject to the work practice standards in subsection (3)(B) of this rule shall submit an initial compliance status report, as required by paragraph (4)(A)3. of this rule, stating that the work practice implementation plan has been developed and procedures have been established for implementing the provisions of the plan.

(D) Special Requirements for Sources Using An Averaging Approach. The owner or operator of an affected source complying with the emission limitations in subsection (3)(A) of this rule through the procedures established in paragraph (3)(A)2. of this rule shall also meet the following requirements:

1. Program goals and rationale. The owner or operator of the affected source shall provide a summary of the reasons why the affected source would like to comply with the emission limitations through the procedures established in paragraph (3)(A)2. of this rule and a summary of how averaging can be used to meet the emission limitations. The affected source shall also document that the additional environmental benefit requirement is being met through the use of the inequalities in paragraph (3)(A)2. of this rule. These

inequalities ensure that the affected source is achieving an additional ten percent (10%) reduction in emissions when compared to affected sources using a compliant coatings approach to meet the requirements of the rule.

2. Program scope. The owner or operator of the affected source shall describe the types of finishing materials that will be included in the affected source's averaging program. Stains, basecoats, washcoats, sealers and topcoats may all be used in the averaging program. Finishing materials that are applied using continuous coaters may only be used in an averaging program if the affected source can determine the amount of finishing material used each day.

3. Program baseline. The baseline for each finishing material included in the averaging program shall be the lower of the actual or allowable emission rate as of the effective date of this rule.

4. Quantification procedures. The owner or operator of the affected source shall specify methods and procedures for quantifying emissions. Quantification procedures for VOC content are included in section (5) of this rule. The owner or operator shall specify methods to be used for determining the usage of each finishing material. The quantification methods used shall be accurate enough to ensure that the affected source's actual emissions are less than the allowable emissions, as calculated using Inequality (1) or (2) in paragraph (3)(A)2. of this rule, on a daily basis to a level of certainty comparable to that for traditional control strategies applicable to surface coating sources.

5. Monitoring, record keeping and reporting. The owner or operator of an affected source shall provide a summary of the monitoring, record keeping and reporting procedures that will be used to demonstrate daily compliance with the inequalities presented in paragraph (3)(A)2. of the rule. The monitoring, record keeping and reporting procedures shall be structured in such a way that inspectors and facility owners can determine an affected source's compliance status for any day. Furthermore, the procedures must include methods for determining required data when monitoring, record keeping and reporting violations result in missing, inadequate or erroneous monitoring and record keeping. These procedures must ensure that sources have sufficiently strong incentive to properly perform monitoring and record keeping.

6. Implementation schedule. The owner or operator of an affected source shall submit an averaging proposal for State and EPA approval by July 31, 2001.

7. Administrative procedures. Any affected source may submit an averaging approach proposal to the director for consideration in meeting the compliance requirements of this rule. The director shall take the following actions:

A. Determine whether or not the proposal submittal is complete and notify the submitter of the completeness status within thirty (30) calendar days of receipt of the proposal; and

B. Approve or disapprove the proposal within thirty (30) calendar days of determining that a proposal submittal is complete.

(4) Reporting and Record Keeping.

(A) Reporting Requirements.

1. The owner or operator of an affected source using a control system to fulfill the requirements of this rule are required to submit a written report of the performance test results for the performance test, required by part (3)(C)2.C.(II) of this rule, to the director within sixty (60) calendar days of completion of the performance test.

2. The owner or operator of an affected source subject to this rule shall submit an initial compliance report no later than sixty (60) calendar days after the compliance date. The report shall include the items required by paragraph (3)(C)2. of this rule.

3. The owner or operator of an affected source subject to this rule and demonstrating compliance in accordance with subparagraph (3)(C)1.A. or (3)(C)1.B. of this rule shall submit a semiannual report covering the previous six (6) months of wood furniture manufacturing operations according to the following schedule:

A. The first report shall be submitted thirty (30) calendar days after the end of the first 6-month period following the compliance date;

B. Subsequent reports shall be submitted within thirty (30) calendar

days after the end of each six (6)-month period following the first report; and

C. Each semiannual report shall include a statement of whether the affected source was in compliance or noncompliance, and, if the affected source was in noncompliance, the measures taken to bring the affected source into compliance.

(B) Record Keeping Requirements.

1. The owner or operator of an affected source subject to the emission standards in subsection (3)(A) of this rule shall maintain records of the following:

A. A certified product data sheet for each finishing material and strippable booth coating subject to the emission limits in subsection (3)(A) of this rule; and

B. The VOC content, kg VOC/kg solids (lb VOC lb/solids), as applied, of each finishing material and strippable booth coating subject to the emission limits in subsection (3)(A) of this rule, and copies of data sheets documenting how the as applied values were determined.

2. The owner or operator of an affected source following the compliance method of subparagraph (3)(C)1.B. of this rule shall maintain the following records:

A. Copies of the calculations to support the equivalency of using a control system, as well as the data that are necessary to support the calculation of E in Equation (3) and the calculation of overall efficiency for a control system for subsection (5)(D) of this rule;

B. Records of the daily average value of each continuously monitored parameter for each operating day. If all recorded values for a monitored parameter are within the range established during the initial performance test, the owner or operator may record that all values were within the range rather than calculating and recording an average for that day; and

C. Records of the pressure drop across the catalyst bed for facilities complying with the emission limitations using a catalytic incinerator

with a fluidized catalyst bed.

3. The owner or operator of an affected source subject to the work practice standards in subsection (3)(B) of this rule shall maintain, onsite, the work practice implementation plan and all records associated with fulfilling the requirements of that plan, including, but not limited to:

   A. Records demonstrating that the operator training program is in place;

   B. Records maintained in accordance with the inspection and maintenance plan;

   C. Records associated with the cleaning solvent accounting system;

   D. Records associated with the limitation on the use of conventional air spray guns showing total finishing material usage and the percentage of finishing materials applied with conventional air spray guns for each semiannual reporting period;

   E. Records showing the VOC content of compounds used for cleaning booth components, except for solvent used to clean conveyors, continuous coaters and their enclosures, and/or metal filters; and

   F. Copies of logs and other documentation developed to demonstrate that the other provisions of the work practice implementation plan are followed.

4. In addition to the records required by paragraph (4)(B)1. of this rule, the owner or operator of an affected source that complies through the method established in subparagraph (3)(C)1.A. or by demonstrating compliance with subsection (3)(A) of this rule shall maintain a copy of the compliance certifications submitted in accordance with paragraph (4)(A)3. of this rule for each semiannual period following the compliance date.

5. The owner or operator of an affected source shall maintain a copy of all other information submitted with the initial status report required by paragraph (4)(A)2. of this rule and the semiannual reports required by paragraph (4)(A)3. of this rule.

6. The owner or operator of an affected source shall maintain all records for a

minimum of five (5) years.

7. Failure to maintain the records required by paragraphs (4)(B)1. through (4)(B)6. of this rule shall constitute a violation of the rule for each day records are not maintained.

(5) Test Methods.

(A) The VOC content and the solids content by weight of the as-supplied finishing materials shall be determined by 10 CSR 10-6.030(14)(C), Reference Method 24.Determination of Volatile Matter Content, Water Content, Density, Volume, Solids and Weight Solids of Surface Coatings. The owner or operator of the affected source may request approval from the director to use an alternative or equivalent method for determining the VOC content of the finishing material.

(B) Owners or operators demonstrating compliance with the provisions of this rule via a control system shall determine the overall control efficiency of the control system (R) as the product of the capture and control device efficiencies, using the test methods cited in subsection (5)(C) of this rule and the procedure in subsection (5)(D) of this rule.

(C) Owners or operators using a control system shall demonstrate initial compliance using the procedures in paragraphs (5)(C) 1. through (5)(C)5. of this rule.

1. The VOC concentration of gaseous air streams shall be determined with a test consisting of three (3) separate runs, each lasting a minimum of thirty (30) minutes using one (1) of the following methods as specified by 40 CFR 60, Appendix A.Reference Methods:

A. *Method 18.Measurement of Gaseous Organic Compound Emissions by Gas Chromatography*;

B. 10 CSR 10-6.030(14)(A), Reference Method 25.Determination of Total Gaseous Nonmethane Organic Emissions as Carbon; or

C. *Method 25A.Determination of Total Gaseous Organic Concentration Using Flame Ionization Analyzer.*

2. Sample and velocity traverses shall be determined by using one (1) of the following methods as specified by 40 CFR 60, Appendix A.Reference Methods:

   A. 10 CSR 10-6.030(1), Reference Method 1.Sample and Velocity Transverses for Stationary Sources; or

   B. *Method 1A.Sample and Velocity Transverses for Stationary Sources with Small Stacks or Ducts*;

3. Velocity and volumetric flow rates shall be determined by using one (1) of the following methods as specified by 40 CFR 60, Appendix A.Reference Methods:

   A. 10 CSR 10-6.030(2), Reference Method 2.Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube); or

   B. *Method 2A.Direct Measurement of Gas Volume Through Pipes and Small Ducts*;

   C. *Method 2C.Determination of Stack Gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts (Standard Pitot Tube)*;

   D. Method 2D.Measurement of Gas Volumetric Flow Rates in Small Pipes and Ducts;

   E. *Method 2F.Determination of Stack Gas Velocity and Volumetric Flow Rate With Three-Dimensional Probes;*

   F. *Method 2G.Determination of Stack Gas Velocity and Volumetric Flow Rate With Two-Dimensional Probes; or*

   G. *Method 2H.Determination of Stack Gas Velocity Taking Into Account Velocity Decay Near the Stack Wall.*

4. To analyze the exhaust gases, use 10 CSR 10-6.030(3), Reference Method 3.Gas Analysis for Carbon Dioxide, Oxygen, Excess Air and Dry Molecular Weight.

5. To measure the moisture in the stack gas, use 10 CSR 10-6.030(4), Reference Method 4.Determination of Moisture Content in Stack Gases.

(D) Owners or operators using a control system to demonstrate compliance with this rule shall determine capture efficiencies by using test methods stated in 10 CSR 10-6.030(20).

10 CSR 10-5.530

EPA Rulemakings

CFR: 40 C.F.R. 52.1320(c)

FRM: 65 CFR 31489 (5/18/00)

PRM: 65 CFR 8094 (2/17/00)

State Submission: 10/10/99

State Final: 10 C.S.R. 10-5 (2/29/00)

APDB File: MO-130

Description: This new rule establishes VOC emissions parameters from wood furniture manufacturing operations that have the potential to emit equal to or greater than 25 tons per year in the St. Louis nonattainment area.

Difference Between the State and EPA-Approved Regulation

None.